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PREPARATION OF CADASTRAL MAP USING GIS SOFTWARE A CASE STUDY ASSOSA UNIVERSITY

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Abstract:

Land is a fundamental to life as we know it like food, fiber, habitation, recreation, and so forth, because most human activities and developmental efforts are based on land. In most countries, legal systems have developed around the original administrative systems and use the cadaster to define the dimensions and location of land parcels described in legal documentation. The cadaster is a fundamental source of data in disputes and lawsuits between landowners. "Cadaster is normally a parcel based and up-to-date land information system containing a record of interests in land (i.e. rights, restrictions and responsibilities). It usually includes a geometric description of land parcels linked to other records describing the nature of the interests, and ownership or control of those interests, and often the value of the parcel and its improvements. It may be established for fiscal purposes (e.g. valuation and equitable taxation), legal purposes (convincing), to assist in the management of land and land use (e.g. for planning and other administrative purposes), and enables sustainable development and environmental protection.The general objective of the study is to develop cadastral information system using GIS for the betterment of land management system in the case of ASU sub part. Methodology is the techniques and procedures that perform a particular activity, which includes Geo-referencing of cadastral maps with high-resolution data, computerization of cadastral maps, creation of spatial and non-spatial database, conversion of database into compatible format and displaying cadastral information system. In the process of carrying out bachelor thesis; the project data is the most essential. Therefore, the validity of data and the scientific method of the data c

Keywords : Cadastral map, cadastral information system, land information system, land registration system, and geographic information system. ----------
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I. INTRODUCTION

Land is a fundamental to life as we know it like food, fiber, habitation, recreation, and so forth, because most human activities and developmental efforts are based on land. In most countries, legal systems have developed around the original administrative systems and use the cadaster to define the dimensions and location of land parcels described in legal documentation. The cadaster is a fundamental source of data in disputes and lawsuits between landowners. "Cadaster is normally a parcel based and up-to-date land information system containing a record of interests in land (i.e. rights, restrictions and responsibilities).

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management of land and land use (e.g. for planning and other administrative purposes), and enables sustainable development and environmental protection. Cadastral Information Systems (CIS) have been defined by the International Federation of Surveyors "a tool for legal, administrative and economic decision-making and an aid for planning and development.

A cadastral information system consists, on the one hand, of a data base containing spatially referencing land-related data for a defined area and, on the other, of procedures and techniques for the systematic collection, updating, processing and distribution of the data. The base of a land information system is a uniform spatial referencing system, which also simplifies the linking of data within the system with other land-related data. The operation of a cadastral Information System (CIS) includes the acquisition and assemblage of data, their processing, storage, and maintenance; and their retrieval, analysis and dissemination.

The usefulness of such a system will depend upon up-to-datedness, accuracy, completeness, and accessibility, and also upon the extent to which the system is designed for the benefit of the user rather than for the producer of the information. The accuracy and cost of cadastral surveys is dependent on the accuracy needed for boundary descriptions. The accuracy should reflect factors such as the value of the land, the risk and cost of land disputes and the information needs of the users of the cadasters. A cadaster is supposed to provide statistics of all issues relating to ownership, use and status of landed property in a given geographical area. The development or improvement of cadastral information system (CIS) was a broad view of system concepts.

If it is ensure that operate efficiently for many purposes besides the basic tasks of providing legal security by titles, or deeds and data for property taxation. Cadastral systems must serve a multi-purpose use and thereby meet the challenge of a modern GIS and IT environment. The paper will present a number of examples to illustrate this multi-purpose use. A principal concern of any country in the world today is to defined and better understanding of cadastral information system (CIS) owing to excessive population growth in many countries. There has been increasing pressure on land and its resources for purposes of shelter, food, better living condition and an improved market economy (plateau, 1996). In Ethiopia, cadastral information system has been generally based on traditional and customary institutions and laws.

1.2. Problem identification

Assosa campus has got problems relate of cadastral information system (CIS) which is currently exists, to explain this problem; first it is better to analyze and identify what are the existing problems. Some of those identified problems regarding to the ASU are: The data is not well organized, that means the traditional way of land registration and organized of spatial and non-special data is not prepared properly with the help of arc GIS software. Additionally this ASU has the problem of cadastral Information system and property registration system, in case of, the location and position of the land dimension for every land parcel, parcel number, type of land boundary, land use, land registration, land disputes etc. so that, our project tries to answer or reduce those problem identified above.

1.3 Project Questions

- For what purpose cadastral information is developed?
- What are the data's to be integrated?
- How can compare and contrasts the existing and the new techniques of cadastral information system?
- What type of data source we use to perform our project objectives?

1.4. The objective of project

1) 1.4.1. General objective

The general objective of the study is preparation of cadastral map of sub-ASU using GIS.

2) 1.4.2 Specific objectives

The specific objective of the study is:

1. To make better land management system of the area.
2. To create spatial and non-spatial database system.
3. To compare the existing and the new techniques of cadastral information system in the Study area.
4. To Proceeds our project the data source used are primary and secondary.

1.5. Significance of the project

This project was give further understudied on the problem of land information system and its consequence on students. The successful achievement of this study is hoped to help the students and it is important to become to the solution by analysis the problem. In addition, it helps to have information about the problem and the solution also.

1.6. Scope of the project

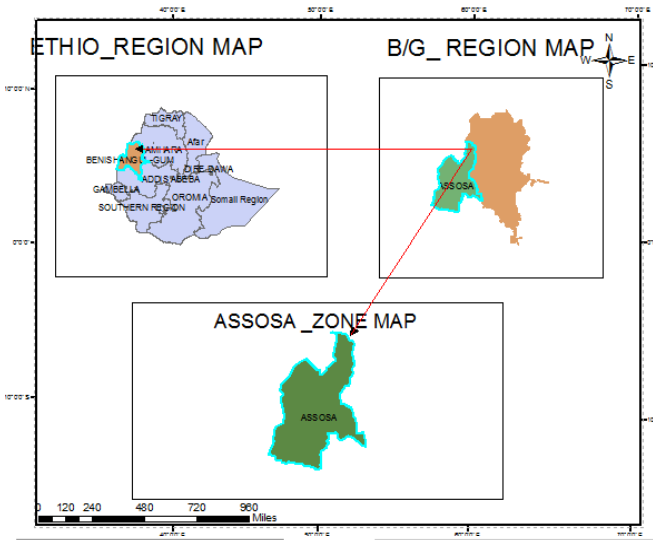
The study area is located in Assosa University, sub-part of Assosa University and the preparation of cadastral map up to linking of spatial data with non-spatial data by using the GIS software.

1.7. Limitations of the project

There are many problems faced in this project that can affect the accuracy and make delay and extends the date of completion. From the starting of the project up to the final submission of this project practical weakness in the project adopted are:-

In case of time shortage we couldn't did socio economic data to gate full and exact information. We didn't prepare well organized cadastral map because of un sufficient lab-room in case of Covid-19.These all and other problems makes are project to be not well/properly and timely ended and executed as needed. However by passing through these all challenges the team tries to do all its best.

A. Figures and Tables



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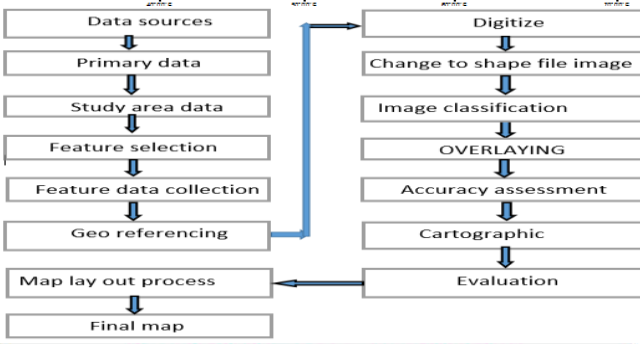

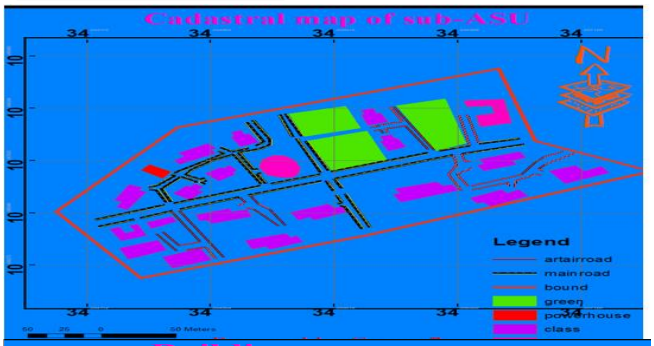

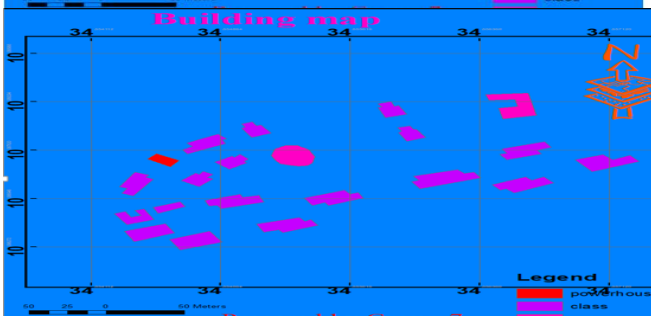

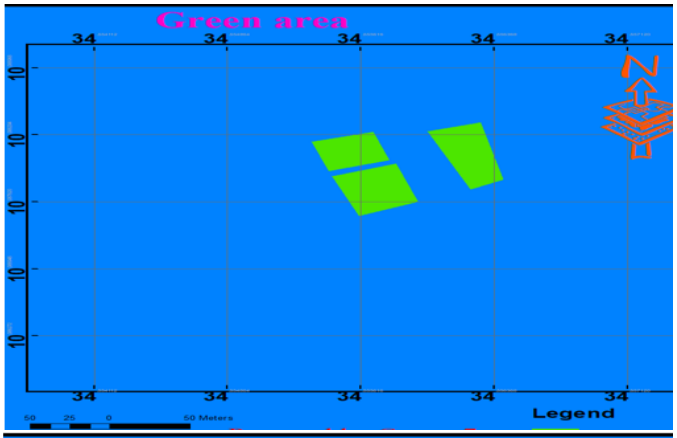

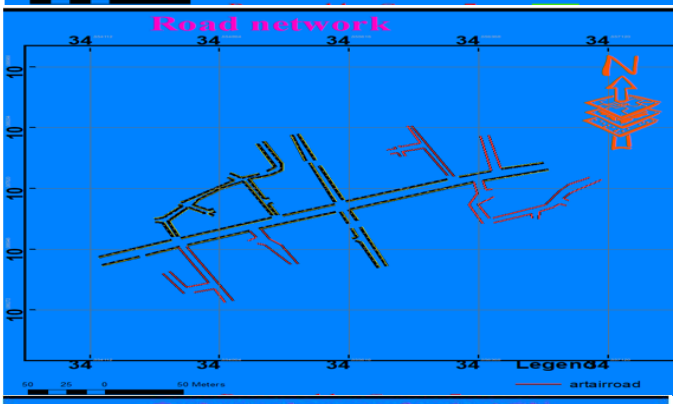

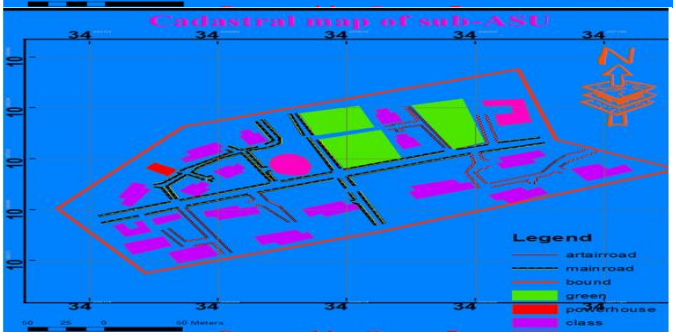

CONCLUSIONS

It is true that cadaster is defined as a parcel based and up-to-date land information system containing a record of interests in land (e.g. rights, restrictions and responsibilities). It usually includes a geometric description of land parcels linked to other records describing the nature of the interests, ownership or control of those interests, and often the value of the parcel and its improvements. So this project is a preparation of cadastral map and by using GIS which is an organized collection of computer hard ware and software, data and analyst to effective capture, store, manipulation, analyze

and retrieve all types of spatial and non-spatial information, we gathered field data (survey data) of study area.

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